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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/944,890

08/31/2001

Song-Lin Young

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7590

08/09/2005

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EXAMINER

MEHRA, INDER P

ART UNIT

PAPER NUMBER

2666

DATE MAILED: 08/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/944,890

Applicant(s)

YOUNG, SONG-LIN

Examiner

Inder P. Mehra

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2666

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 4/20/05.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-59 is/are pending in the application.
- 4a) Of the above claim(s) 2,3,21-23,28-31,36,52,53,56 and 57 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4-20,27,33-35,37-51,54,55,58 and 59 is/are rejected.
- 7) ☒ Claim(s) 24-26 and 32 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. This is in response to Application dated: 4/20/2005.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 19 and 33-34, are rejected under 35 U.S.C. 103(a) as being unpatentable over **Lee** (USPub. No. 2002/0045424) in view of **Zyren** (US Patent No. 6,377,608).

For claims 1, 19 and 33, Lee discloses "in a network of Bluetooth protocol devices, a method for establishing communications", (refer to fig. 4, a Bluetooth private network structure) comprising:

- prior to broadcasting a piconet beacon frequency, establishing a piconet with a master device (A master should be discriminated from a slave in Bluetooth, in which the master orders a command and the slave receives and performs the command, refer to paragraph 0008);
- the master device broadcasting a piconet beacon frequency at a first predetermined frequency $f(kB)$ from a plurality of spread spectrum transmission frequencies (refer to "sending a beacon signal to each of the Bluetooth devices in local Bluetooth networks to locate the Bluetooth device", refer to abstract, and paragraph 0012). Where in the piconet beacon frequency

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includes the master device's Bluetooth address (BD-addr) and clock (CLK) information (refer to "The FH sequence used for the piconet channel is completely determined by the address or identity of the device acting as the master. The system clock of the master device determines the phase in the hopping sequence (i.e., the designation of which one of the possible hops in the sequence is the "current" hop", col. 4 lines 55-60);

- in response to receiving the piconet beacon frequency, establishing communications with the piconet (upon receiving the beacon signal, transmitting from the Bluetooth device a route update packet to the gateway to set a communication path, refer to paragraph 0013).

Lee does not disclose explicitly the following limitation, which is disclosed by Zyren, as follows:

- monitoring to receive the piconet beacon frequency, (A beacon responsive radio control mechanism, installed in each ad hoc radio, monitors the beacon channel for the presence of the wireless beacon, refer to abstract, and monitor whether it is in close proximity to an infrastructure network, refer to col. 2 lines 25-30).

It would have been obvious to a person of ordinary skill in the art at the time of the invention use the capability of "monitoring the beacon frequency" as taught by Zyren. This capability can be implemented by periodically tuning the receive frequency synthesizer of its transceiver to this frequency. The motivation to do so being that a node in an ad hoc network

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radio, such as an FHSS radio, is able to monitor whether it is in close proximity to an infrastructure network, as taught by Zyren.

For claim 34, Lee discloses the following limitations:

- “prior to broadcasting the piconet beacon frequency, establishing a piconet with a master device, (A master should be discriminated from a slave in Bluetooth, in which the master orders a command and the slave receives and performs the command, refer to paragraph 0008); and
- wherein broadcasting a piconet beacon frequency includes the master device broadcasting at a first predetermined frequency $f(kB)$, from the plurality of spread spectrum transmission frequencies, (refer to “sending a beacon signal to each of the Bluetooth devices in local Bluetooth networks to locate the Bluetooth device”, refer to abstract, and paragraph 0012;

4. Claims 4-6 and 35, 37-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Lee** in view of **Zyren**, as above, further, in view of **Haartsen** (US Patent No. 6,754,250)

For claims 4-6 and 35, 37-38, Lee in view of Zyren disclose all the limitations of subject matter with the exception of the following limitations, which are disclosed by Haartsen’250:

- “wherein broadcasting a piconet beacon frequency includes the master device broadcasting its Bluetooth address (BD-addr) and clock (CLK) informat  n.”, **as recited by claim 35**, (refer to “The FH sequence used for the piconet

channel is completely determined by the address or identity of the device acting as the master. The system clock of the master device determines the phase in the hopping sequence (i.e., the designation of which one of the possible hops in the sequence is the "current" hop", col. 4 lines 55-60).

- wherein receiving the piconet beacon frequency includes an inquiring device receiving the BD-addr and CLK information of the master device, **as recited by claims 4-5 and 35, 37-38**, (the slaves listen to the beacon channel with a very low duty cycle, The FH sequence used for the piconet channel is completely determined by the address or identity of the device acting as the master. The system clock of the master device determines the phase in the hopping sequence, refer to col. 9 lines 50-55 and col. 4 lines 55-60),

It would have been obvious to a person of ordinary skill in the art at the time of the invention to use the capability of "wherein broadcasting a piconet beacon frequency includes the master device broadcasting its Bluetooth address (BD-addr) and clock (CLK) information.", as taught by Haartsen. This capability can be implemented by having pseudo random frequencies out of Frequency Hopping Sequence. The motivation to do so being that a node in an ad hoc network radio, such as an FHSS radio, is able to set up link with Master.

5. Claims 7-8, and 39-40, are rejected under 35 U.S.C. 103(a) as being unpatentable over **Lee, as above**, in view of **Zyren, as above**, **further**, in view of **Haartsen** (US Patent No. 6,519,460), hereinafter Haartsen'460.

For claims 7-8 and 39-40, Lee discloses all the limitations of the subject

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matter with the exception of the following limitation, which is disclosed by Haartsen'460, as follows: :

- **Wherein establishing communications includes, following the receiving of the first downlink FHS packet by the inquiring device, transmitting a first uplink FHS packet from the inquiring device to the master device, as recited by claims 7-8, 39-40. (refer to “on exemplary FH link 200, master 120 may alternate transmit and receive single packets 121-126 and, ----- across time slots 201-212, each having a hop frequency 221-232”, refer to col. 4 lines 35-42.**

It would have been obvious to a person of ordinary skill in the art at the time of the invention to use the capability of “receiving a first uplink FHS packet from an inquiring device” as taught by Haartsen. This capability can be implemented by having pseudo random frequencies out of Frequency Hopping Sequence. The motivation to do so being that a node in an ad hoc network radio, such as an FHSS radio, is able to set up link with Master.

6. Claims 20, and 51, is rejected under 35 U.S.C. 103(a) as being unpatentable over **Lee, as above**, in view of **Haartsen** (US Patent No. 6,519,460), hereinafter, Haartsen'460.

For claims 20, and 51, Lee discloses “in a network of Bluetooth protocol devices, a method----- for establishing communications”, (refer to fig. 4, a Bluetooth private network structure) comprising:

- a master device broadcasting a piconet beacon frequency in a first downlink FHS packet including the master device's BD addr and CLK information. at a

first predetermined frequency $f(kB)$ from a plurality of spread spectrum transmission frequencies, **as recited by claims 20, 51**, (refer to “sending a beacon signal to each of the Bluetooth devices in local Bluetooth networks to locate the Bluetooth device”, refer to abstract, and paragraph 0012, refer to “The FH sequence used for the piconet channel is completely determined by the address or identity of the device acting as the master. The system clock of the master device determines the phase in the hopping sequence (i.e., the designation of which one of the possible hops in the sequence is the "current" hop”, Haartsen’250 col. 4 lines 55-60);

Lee does not disclose explicitly the following limitation, which is disclosed by

Haartsen’460, as follows:

- receiving a first uplink FHS packet from an inquiring device, in response to broadcasting the piconet beacon frequency. wherein the first uplink FHS packet includes the inquiring device BD addr in the FHS packet payload and a FHS packet access code (AC) derived from the master device BD addr; **as recited by claims 20, 51** (refer to “on exemplary FH link 200, master 120 may alternate transmit and receive single packets 121-126 and, -----across time slots 201-212, each having a hop frequency 221-232”, refer to col. 4 lines 35-42;
- following the receiving of the first uplink FHS packet by the master device. transmitting a second downlink FHS packet from the master device to the inquiring device, (refer to “on exemplary FH link 200, master 120 may

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alternate transmit and receive single packets 121-126 and, -----across time slots 201-212, each having a hop frequency 221-232”, refer to col. 4 lines 35-42);

It would have been obvious to a person of ordinary skill in the art at the time of the invention to use the capability of “receiving a first uplink FHS packet from an inquiring device” as taught by Haartsen’460. This capability can be implemented by having pseudo random frequencies out of Frequency Hopping Sequence. The motivation to do so being that a node in an ad hoc network radio, such as an FHSS radio, is able to set up link with Master.

7. Claim 54 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Lee in view of Haartsen’460**), **as above**, in view of **Haartsen** (US Patent No. 6,754,250), hereinafter Haarsen’250.

For claim 54, Lee disclose all the limitations of subject matter, with the exception of the following limitations, which are disclosed by Haartsen’460 and Haartsen’250 :

- wherein the receiver receives a first uplink FHS packet, including the BD-addr of the inquiring device following the transmission of the first downlink FHS packet, **as recited by claim 54**, (the slaves listen to the beacon channel with a very low duty cycle (monitoring to receive), The FH sequence used for the piconet channel is completely determined by the address or identity of the device acting as the master. The system clock of the master device determines the phase in the hopping sequence, refer to Haartsen’250 col. 9 lines 50-55 and col. 4 lines 55-60);

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It would have been obvious to a person of ordinary skill in the art at the time of the invention to use the capability of “wherein broadcasting a piconet beacon frequency includes the master device broadcasting its Bluetooth address (BD-addr) and clock (CLK) information.”, as taught by Haartsen’250. This capability can be implemented by having pseudo random frequencies out of Frequency Hopping Sequence. The motivation to do so being that a node in an ad hoc network radio, such as an FHSS radio, is able to set up link with Master.

8. Claim 55 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Lee** in view of **Zyren, as above, further**, in view of **Haartsen** (US Patent No. 6,754,250, **hereinafter** Haartsen’250).

For claim 55, Lee discloses “in a network of Bluetooth protocol devices, a method for establishing communications”, (refer to fig. 4, a Bluetooth private network structure) comprising:

a receiver having an input to monitor and receive a piconet beacon frequency at a first predetermined frequency $f(kB)$ from plurality of spread spectrum transmission frequencies. wherein the piconet beacon frequency includes- a first downlink FHS packet with the master device Bluetooth address: (BD addr) and clock. (CT.K) information, (refer to “sending a beacon signal to each of the Bluetooth devices in local Bluetooth networks to locate the Bluetooth device”, refer to abstract, and paragraph 0012).

a transmitter having an output to establish communications with a piconet master device in response to receiving the piconet beacon frequency (upon receiving the beacon signal,

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transmitting from the Bluetooth device a route update packet to the gateway to set a communication path, refer to paragraph 0013).

Lee in view of Zyren does not disclose the following limitation, which is disclosed by Haartsen, as follows

Where in the piconet beacon frequency includes the master device's Bluetooth address (BD-addr) and clock (CLK) information (refer to "The FH sequence used for the piconet channel is completely determined by the address or identity of the device acting as the master. The system clock of the master device determines the phase in the hopping sequence (i.e., the designation of which one of the possible hops in the sequence is the "current" hop", col. 4 lines 55-60);

It would have been obvious to a person of ordinary skill in the art at the time of the invention use the capability of "Where in the piconet beacon frequency includes the master device's Bluetooth address (BD-addr) and clock (CLK) information" as taught by Haartsen. These capabilities can be implemented by periodically tuning the receive frequency synthesizer of its transceiver to this frequency and by having pseudo random frequencies out of Frequency Hopping Sequence. The motivation to do so being that a node in an ad hoc network radio, such as an FHSS radio, is able to monitor whether it is in close proximity to an infrastructure network, as taught by Zyren and a node in an ad hoc network radio, such as an FHSS radio, is able to set up link with Master.

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9. Claim 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Lee** in view of **Zyren**, as above, and **Haartsen**, hereinafter, Haartsen'460, further in view of **Haartsen** (US Patent No. 6,754,250), hereinafter, Haartsen'250.

For claim 58, Lee in view of Zyren, Haartsen'460 disclose all the limitations of subject matter, with the exception of the following limitation which is disclosed by Haartsen'250, as follows:

- wherein the inquiring device derives the master device frequency hopping sequence from the master device BD-addr and CLK information received on the piconet beacon frequency, **as recited by claim 58**, (the slaves listen to the beacon channel with a very low duty cycle (**monitoring, as recited by claim 56**), (refer to Haartsen'250' col. 9 lines 50-55) The FH sequence used for the piconet channel is completely determined by the address or identity of the device acting as the master. The system clock of the master device determines the phase in the hopping sequence, refer to col. 4 lines 55-60).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to use the capability of "wherein broadcasting a piconet beacon frequency includes the master device broadcasting its Bluetooth address (BD-addr) and clock (CLK) informati^on.", as taught by Haartsen'250. This capability can be implemented by having pseudo random frequencies out of Frequency Hopping Sequence. The motivation to do so being that a node in an ad hoc network radio, such as an FHSS radio, is able to set up link with Master.

Allowable Subject Matter

10. Claims 27 and 32 are allowed.

Reason for Allowance

The prior art of record does not disclose, teach or suggest the following limitations directly or implicitly:

“wherein FHS packet includes the inquiring device BD addr in the FHS packet payload and a FHS packet access code (AC) derived from the master device BD addr”

11. Claims 9-18, 24-26, 41-50 and 59 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

12. Applicant's arguments filed 1, 4-20, 24-27, 32-35, 37-51, 54-55, and 58-59 have been fully considered but they are not persuasive.

Applicant argues that the combination of references does not explicitly describe every limitation of claims.

With respect to the first prima facie requirement, as noted above, none of the above mentioned references suggest that Lee's beacon be modified to supply a piconet beacon with the BD-addr and CLK information.

With respect to the second prima facie requirement, the combination of references would not provide a foundation to reasonably derive the claimed invention piconet beacon. With respect to the third prima facie requirement, the combination of references does not describe all the

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elements of the claimed invention. The claimed invention recites a beacon that includes a master's BD-addr and CLK information. Lee describes a simple beacon, whose only attribute is signal strength Zyren describes an avoidance beacon and Haartsen '460 merely describes a conventional FH link. Haartsen '250 describes a park mode beacon. No mention is made of using this beacon to acquire a piconet. Neither is there mention made of the park beacon including a BD-addr and CLK information. **Therefore, the combination of references does not explicitly describe every limitation of claim 55. Neither are the claim limitations of claim 55 suggested by the combination of references.**

In response, it is stated that all limitations of claims are disclosed by Lee, Zyren an Haartesen, refer to paragraph 3 above, which are updated. Lee discloses "sending a beacon signal to each of the Bluetooth devices in local Bluetooth networks to locate the Bluetooth device", refer to abstract, and paragraph 0012). Where in the piconet beacon frequency includes the master device's Bluetooth address (BD-addr) and clock (CLK) information (refer to "The FH sequence used for the piconet channel is completely determined by the address or identity of the device acting as the master. The system clock of the master device determines the phase in the hopping sequence (i.e., the designation of which one of the possible hops in the sequence is the "current" hop", col. 4 lines 55-60.

Zyren discloses "A beacon responsive radio control mechanism, installed in each ad hoc radio, monitors the beacon channel for the presence of the wireless beacon, refer to abstract, and monitor whether it is in close proximity to an infrastructure network, refer to col. 2 lines 25-30).

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Haartsen disclose ““wherein broadcasting a piconet beacon frequency includes the master device broadcasting its Bluetooth address (BD-addr) and clock (CLK) informatâon.”, **as recited by claim 35**, (refer to “The FH sequence used for the piconet channel is completely determined by the address or identity of the device acting as the master. The system clock of the master device determines the phase in the hopping sequence (i.e., the designation of which one of the possible hops in the sequence is the "current" hop”, col. 4 lines 55-60”.

Applicant argues that “The Prima Facie requirements” have not been satisfied.

It is suggested that In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In light of above explanation, arguments by applicant are not persuasive.

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Inder P. Mehra whose telephone number is 571-272-3170. The examiner can normally be reached on Monday through Friday from 8AM to 5PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on 571-272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Inder Pal Mehra 8/7/05
Inder P Mehra
Examiner
Art Unit 2666

MT
DANIELSON
PRIMARY EXAMINER